JOURNAL OF MYCOLOGY.

Vol. I. MANHATTAN, KANSAS, NOVEMBER, 1885. No. 11.

SYNOPSIS OF THE NORTH AMERICAN SPECIES OF ASTERINA, DIMEROSPORIUM AND MELIOLA.

BY GEORGE MARTIN.

ASTERINA.

ASTERINA, Liv. Ann. Science Nat. 1845, 3, p. 59. (Etym. *Aster* from the radiating mycelium.) Perithecia globose, depressed or lenticular, membranous, subastomous, seated upon spots of black radiating subsuperficial (rarely subinnate) mycelium. Asci properly short and thick mostly 8-spored; sporidia two-celled, pleuriseptate or continuous, hyaline or brown. Sylloge Fungorum I, p. 39.

The perithecia in the species we now find included in this genus vary from an entire membranous sac to a mere covering of coalesced, radiating hyphæ, and the mycelium, which typically forms black spots, is often light colored, scant, evanescent or entirely obsolete. The genus therefore contains some species nearly approaching Sphærella and Microthyrium on the one hand and Ascomycetella on the other.

The following classification has been adopted:

A. Perithecia complete, depressed or lenticular.

B. Perithecia incomplete, flattened or scutellate.

C. Species imperfect or doubtful.

Species with globose perithecia will be included in Dimerosporium.

The quotation marks indicate that the species so enclosed are only known to me through the published descriptions.

It is proper that I should here state, that I am under great obligation to my friend, J. B. Ellis, for furnishing me with specimens not in my herbarium, and for his criticism of many of my notes.

A. Perithecia complete, depressed or lenticular.

1 Asterina anomola, Cke. & Hark., Grev. 9, p. 67.

"Effused black, velvety; perithecia hemispherical or globose depressed; mycelium intricate, brown with erect, rigid, scattered setæ; asci clavate; sporidia biseriate, lanceolate, 1—5-septate, hyaline, 20—24 x 4 μ. Perithecia 80 μ in diameter, setæ about twice as long and sometimes found upon the former." Probably a Dimerosporium.

On living laurel leaves, California.

2. Asterina carnea, Ellis & Martin. Am. Nat. 17, p. 1284. Ellis N. A. F. No. 1290.

Mycelium thin, brown, hypophyllous, adnate, mostly near the margin of the leaf or in orbicular spots, about 5 mm. in diameter; perithecia flesh colored, flattened, soft, crowded, 60—100 μ in diameter; asci obovate, sessile, 8-spored, 30—40 x 22—35 μ; sporidia subhyaline, ovate, two-celled, uniseptate, 16—17 x 7—8 μ.

On *Persea palustris*, Florida.

3. Asterina Celastri, Ellis & Kellerman. Journ. of Mycology I, p. 3.

Perithecia hypophyllous in groups or scattered, convex, orbicular, black, 250 μ in diameter; mycelium of brown radiating threads around the base; asci oblong, ovate, 12—15 x 6—7 μ, filled with granular matter; immature. The parts of the leaf occupied by the groups of perithecia are a little darker than the surrounding portions.

On living leaves of *Celastrus scandens*, Kansas.

4. Asterina delitescens, E. & M. Am. Nat. 17, p. 1284. Ellis N. A. F. No. 1291.

Mycelium thin, black, orbicular, epiphyllous, 2—4 mm. in diameter, perithecia black, flattened, crowded, 75 x 100 μ, structure radiate-cellular; asci oboval or subglobose, 8-spored, 30—35 x 18—24 μ; sporidia subhyaline, oval, uniseptate, 15—18 x 6—7 μ.

On living leaves of *Persea palustris*, Florida.

5. Asterina Gaultheriæ, Curtis. Ellis N. A. F. No. 1358.

Perithecia brown-black, flattened, slightly elevated in the center, hypophyllous, scattered, 170—250 μ in diameter, surrounded by a narrow border of brown, branching mycelium; asci ovate, 22—25 x 13—16 μ; sporidia hyaline, obovate, uniseptate, the upper cell the larger, 9 x 3 μ.

On living leaves of *Gaultheria procumbens*, Newton, Mass.

6. Asterina nuda, Pk.

Mycelium brown, branching, scanty; perithecia black, at first subglobose, afterwards depressed, thickly clustered near the midrib, mostly hypophyllous, 100—150 μ in diameter, structure cellular; asci oval, 8-spored, 35—40 x 10 μ; sporidia ovate, hyaline, uniseptate, biseriate, 10—12 x 3—4 μ.

On living leaves of *Abies* (?)

I do not know where Prof. Peck published this species, but the above description is from an authentic specimen gathered by him.

7. ASTERINA PEARSONI, E. & E. Jour. of Mycology, I, p. 92.

"Perithecia minute (100 μ), flat, superficial, obscurely perforated above, of close cellular structure, with a scanty, subradiating mycelium around the margin; asci oblong, obtuse, sessile, 40 x 15 μ, without paraphyses; sporidia biseriate, clavate, oblong, granular, becoming uniseptate and slightly constricted at the septa, 15—20 x 3½—4½ μ, acute below, obtuse above, hyaline."

On blackberry canes, Vineland, N. J.

8. ASTERINA PINASTRI, Sacc. & Ellis. Michelia 2, p. 567. Ellis N. A. F. No. 789.

Perithecia black, globose-depressed, gregarious, astomous, 100—120 μ. Structure cellular; mycelium brown, branching, closely septate, very scant; asci oblong, ends obtuse, sessile, 8-spored, 40—50 x 20—24 μ, without paraphyses; sporidia 2—3 seriate, oval, uniseptate, hyaline at first, then dusky, 18—20 x 6—7 μ.

On leaves of *Pinus rigida*, New Jersey.

9. ASTERINA TENELLA, Cke. Grev. 13, p. 67.

"Epiphyllous, effused, thin, black; perithecia minute (.03—.22 mm.) applanate, mingled with brown, creeping, mycelium; asci saccate, 4--8-spored; sporidia (eight-spored) 28—30 x 12—14 μ, (four-spored) 40 x 22 μ, light brown."

On *Persea Carolinensis*, Carolina.

10. ASTERINA XEROPHYLLI, Ellis. Am. Nat. 17, p. 319.

"Mycelium scanty; perithecia entirely superficial, orbicular or subelongated, slightly depressed, 167 μ in diameter; asci obovate contracted into a thick, stipe-like base, 35 x 15 μ; sporidia hyaline, fusiform or clavate-fusiform, faintly 3-septate, 18—20 x 3—3½ μ.

On fading leaves of *Xerophyllum asphodeloides*, New Jersey.

B. Perithecia incomplete, flattened or scutellate.

11. ASTERINA DISCOIDEA, E. & M. Am. Nat. 18, p. 1148. Jour. of Mycology, 1. p. 101.

Perithecia hypophyllous, orbicular, slightly depressed in the center, olivaceous, thin, 500—800 μ in diameter with an indistinct, reticulated margin; asci obovate or globose, 30—40 x 30—35 μ; sporidia crowded, clavate-oblong, uniseptate, 12—16 x 4—5 μ. Closely allied to Ascomycetella.

On living leaves of *Quercus laurifolia*, and of *Olea Americana*, Florida.

12. ASTERINA ILICIS, Ellis. Am. Nat. 17, p. 319. Ellis N. A. F. No. 1357.

Perithecia brown black, hypophyllous, scattered, adnate, at first hemispherical then flattened and depressed, 100—120 μ in diameter, opening circular, structure a disc of brown, interlacing hyphæ covering the nucleus and forming a narrow margin beyond; asci obovate, 8-spored, 22—30 x 9—15 μ; sporidia subhyaline, oblong, 1-septate, biseriate, 11 x 4 μ.

On living leaves of *Ilex glabra*, Newfield, N. J.

13. ASTERINA INTRICATA, E. & M. n. sp.

Mycelium white, scanty, evanescent; perithecia brown, flat-orbicular, soft, very thin, hypophyllous, 500 μ in diameter, asci subglobose, stipitate, 15—18 x 18 μ; sporidia hyaline, obovate or ovate, 1-septate, 7—12 x 2—3 μ. Closely allied to Ascomycetella.

On living leaves of *Quercus arenaria*, Florida.

14. ASTERINA LEPIDIGENA, E. & M. Am. Nat. 18, p. 1148. Ellis N. A. F. No. 1361.

Mycelium hyaline, scanty, hypophyllous; perithecia black, subglobose, at length flat, very thin and fragile, 200—300 μ in diameter; asci ovate, 8-spored, 30 x 15 or 42 x 12 μ; sporidia obovate, hyaline, 1-septate, 12 x 4 μ.

Attached to the epidermal scales on old, living leaves of *Andromeda ferruginea*, Florida. Closely allied to Ascomycetella.

15. ASTERINA PATELLOIDES, E. & M. *A. erysiphoides*, E. & M. Ellis N. A. F. No. 1359.

Perithecia dark brown, soft, orbicular, flattened, depressed in the center, hypophyllous, 275—300 μ, with a narrow border of scanty, radiating, white, mycelium; asci ovate, oblong, 8-spored, 36 x 15 μ; sporidia obovate, 1-septate, 2-seriate, hyaline, 15—6 μ. Closely allied to Ascomycetella.

On living leaves of *Quercus laurifolia*, Florida.

The name of this species has been changed, as A. erysiphoides had previously been given to another plant.

16. ASTERINA PUSTULATA, E. & M. Am. Nat. 18, p. 1148.

Perithecia brown, soft, flattened, hypophyllous, adnate, 200—500 μ in diameter, structure a membranous disc of brown, branching, coalesced hyphæ, covering the nucleus and forming a narrow border beyond; asci subglobose, 8-spored, 50—60 μ in diameter; sporidia hyaline, obovate, 1-septate, 30—40 x 10—12 μ. Closely allied to Ascomycetella.

On living leaves of *Quercus laurifolia*, Florida.

17. ASTERINA STOMATOPHORA, E. & M. Journal of Mycology, I, p. 98.

Perithecia brown black, lenticular, stomatous, hypophyllous, scattered, 170—180 μ in diameter, texture cellular, forming a disc which covers the nucleus and extends beyond in a thin reticulated margin; asci oblong, broader above and abruptly contracted into a short stipe, 30—35 x 6—8 μ; paraphyses none; sporidia oblong-obovate, hyaline, 1-septate, 2-seriate, 7—12 x 2½—3

On living leaves of *Quercus laurifolia* and of *Gelsemium sempervirens*, Florida.

18. ASTERINA SUBCYANEA, E. & M. Am. Nat. 18, p. 1148. Ellis N. A. F. No. 1360.

Perithecia hypophyllous, convex, depressed, ostiolate, obsolete beneath, 250—300 μ in diameter, structure moniliform hyphæ of subglobose, dark greenish blue cells, 5—7 μ in diameter, which cover the

nucleus and extend beyond in a thin, membranous border, closely adnate to the leaf, ostiolum papilliform, collapsing with a broad, circular opening when dry; asci slightly narrower at each end, sessile, 8-spored, 75 x 15 μ; sporidia hyaline, oblong-clavate, 1-septate, 2-seriate, 20 x 4—7 μ.

On living leaves of *Quercus laurifolia*, Florida.

C. Species imperfect or doubtful.

19. ASTERINA CONGLOBATA. B. & C. Grev. 4, p. 9.

"Mycelium a few slender threads; perithecia globose, minute, conglobate; asci obovate; sporidia shortly subfusiform, 1-septate." Probably a Dimerosporium.

On *Arbutus Uva-ursi*.

20. ASTERINA COMATA, B. & Rav. Grev. 4, p. 9. Ravenel F. A. No. 73.

Scattered, large, densely clothed with short, brown hairs, about 700 μ in diameter; mycelium obsolete. No fruit, immature.

On leaves of *Magnolia glauca*, and *M. grandiflora*, Alabama to Florida.

21. ASTERINA CUTICULOSA, Cke. Grev. 7, p. 49. Ravenel F. A. No. 328.

Perithecia brown, orbicular, applanate, adnate, hypophyllous, clustered near the margin of the leaf, 500—800 μ in diameter, structure cellular membranaceous, obsolete beneath; no mycelium; "asci globose, 25 μ in diameter; sporidia elliptic, ends obtuse, 1-septate, subconstricted, hyaline, 10 x 5 μ. A somewhat abnormal species," (Cke.)

On leaves of *Ilex opaca*, Georgia.

My specimen is sterile.

22. ASTERINA DECOLORANS, B. & C. Grev. 4, p. 9.

"Spots orbicular, red, undulate, bullate; mycelium scanty, consisting of a few moniliform threads and others entire; perithecia punctiform; asci short, oblong; sporidia, 1-septate, 10 μ long."

On an unknown leaf, New Jersey.

23. ASTERINA DIPLODIOIDES, B. & C. Grev. 4, p. 9.

"Spots orbicular, mycelium interrupted; perithecia minute; sporidia oblong, obtuse, uniseptate, light brown, 8 μ long."

On leaves of *Andromeda acuminata*, Alabama.

24. ASTERINA NIGERRIMA, Ellis. Bulletin Torr. Bot. Club, 8, p. 91.

Mycelium brown, branching, scanty; conidia oval, dusky, 4½—6 x 3 μ, in subglobose sacs, 60 μ in diameter. Perithecia black, orbicular, flattened, stomatous, subinnate, 95—140 μ in diameter, structure cellular-radiate, obsolete beneath, asci oblong-clavate, sessile, 33—36 x 10—14 μ; sporidia hyaline, obovate, 1-septate, ("4-nucleate," Ellis) 10—12 x 3—4 μ.

On old stems of *Erigeron*, Newfield, N. J.

This is probably a Microthyrium.

25. ASTERINA OLEINA, Cke. Grev. 11, p. 38. Ravenel F. A. No. 757.

Perithecia hypophyllous, scattered, flattened, discoid with a narrow margin of brown radiating hyphæ; asci clavate, 24—30 x 9—10 μ sporidia undeveloped in my specimen. "Sporidia hyaline, small, uniseptate

(immature). Pycnidia similar but smaller, stylospores minute, oval, hyaline 5 μ long." Cke.

On leaves of *Olea Americana*.

26. Asterina pelliculosa, Berk. Sylloge 1, p. 46.

"Mycelium pelliculose, in spots, black; perithecia globose-depressed, black; asci obovate; sporidia oblong-ellipsoid, 1-septate 16—20 μ long. Probably a Dimerosporium.

On leaves of *Prinos*, etc., etc. Ceylon, Cuba, N. America, etc."

Asterina pelliculosa in Ravenel's F. A. No. 75, appears to be identical with Dimerosporium (Asterina) orbiculare B. & C., and cannot be the same as that described above.

27. Asterina Plantaginis, Ellis. Bull. Torr. Bot. Club, 9, p. 74. Ellis N. A. F. No. 790.

Spots brownish, immarginate; perithecia brown-black, subglobose, membranaceous, innate, clustered in the spots, mostly epiphyllous, 70—80 μ in diameter, "with a few brown threads radiating from the base or entirely wanting," (Ellis.) Asci ovate, 26—33 x 13—16 μ; sporidia hyaline oblong, obtuse, 1-septate, slightly constricted at the middle or 2-nucleate, 9—10 x 3—5 μ.

On living leaves of *Plantago major*, Philadelphia, Pa.

This is probably a Sphærella.

28. Asterina ramularis, Ellis. Bull. Torr. Bot. Club, 9, p. 20. Ellis N. A. F. No. 720.

Mycelium light, subhyaline, very scanty; perithecia flattened, orbicular, stomatous, clustered, frequently coalescing, subinnate, 250—300 μ in diameter, structure dark brown moniliform hyphæ covering the nucleus, obsolete beneath, mostly sterile; "Asci oblong, spore bearing portion 50 x 25 μ, stipe at length absorbed; sporidia light, crowded, elliptical, coarsely granular with 1—2 large vacuoles at first, about 15 x 10 μ" (Ellis.)

On dead twigs of *Lindera Benzoin*.

Probably a Microthyrium.

29. Asterina spurea, B. & C. Grev. 4, p. 10.

"Perithecia scattered, dot-like, surrounded by short, articulated, submoniliform, radiating threads, which are joined together laterally in twos, sometimes forked at the apex."

On leaves and stems of *Hyptis radiata*. Carolina and Alabama.

30. Asterina Wrightii, B. & C. Grev. 4, p. 10.

"Mycelium very thin; perithecia brown, granular, crowded, like little grains of gunpowder, surrounded by cirrhate threads; asci clavate, short." Texas, C. Wright.

"Apparently on some smooth Curcurbit."

31. Asterina cupressina (Rehm) Cke. Grev. 6, p. 17. Ellis N. A. F. No. 500.

Perithecia dark brown, hemispherical or lenticular, adnate, stomatous, 85—290 μ in diameter; structure coalesced, brown, radiating hyphæ, covering the nucleus and forming a narrow border beyond, obsolete beneath; asci cylindrico-clavate, stipitate, 8-spored, 50 x 15 μ; sporidia brown, obovate, 1-septate, 2-seriate, 12—15 x 6—7 μ. "Three to six rigid hairs are sometimes attached to the perithecia," and the larger ones contain pycnidia with brown, elliptic stylospores, 20 x 10 μ," Cke.

On dead leaves of *Cupressus thyoides*. Rhem Ascomycetum, Venturia Cupressina, No. 394.

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NEW FUNGI.

BY J. B. ELLIS AND B. M. EVERHART.

NECTRIA (CALONECTRIA) FULVIDA, E. & E.—On bark of decaying oak limb lying on the ground, Newfield, N. J., Oct. 7, 1885. Perithecia superficial, gregarious, subglobose, small (1-6 mm.), tuberculose-squamulose, light yellow, collapsing above when dry. Ostiolum large but not prominent. Asci oblong-cylindrical, nearly sessile, obtuse, about 75 x 10—12 μ, surrounded by indistinct paraphyses. Sporidia 8 in an ascus, fusiform, hyaline or nearly so, slightly curved, 38—50 x 3—3½ μ, tapering from the middle to each end, nucleate, becoming about 8-septate. The specimens were growing on the bark of an old swelling caused by *Dichæna strumosa*, Fr.

NECTRIA ATROFUSCA (Schw.), Syn. N. Am. No. 1429.—On dead limbs of *Staphylea trifolia*, West Chester, Pa., Oct., 1885 (Everhart.) Densely crowded on a tuberculiform stroma 1—1½ mm. broad, and easily separable from the bark into which its base is sunk. Perithecia (20—40) minute (1-6 mm.), depressed, conic, black, rough except the subconic, somewhat polished ostiolum which is at length radiate-sulcate cleft. Asci about 75 x 16 μ, oblong-cylindrical; sporidia hyaline or nearly so, oblong-elliptical, or sometimes a little narrower at one end, 1-septate, very slightly constricted, 10—12 x 4½—5 μ, ends obtuse. In some cases the perithecia were found growing around the margin or on the bare wood in the bottom of the little pits from which the stroma had fallen. The mature sporidia have a smoky yellow tint. This appears not to have been met with before since Schweinitz's time.

HYPOCREA CORTICIcola, E. & E.—On bark of dead limbs of *Magnolia glauca*, Newfield, N. J., Aug. 1885. Stroma thin, milk white with the margin slightly cottony, forming a continuous layer extending along the limb for six inches or more, finally becoming dirty white and cracking into small areas as in *Corticium polygonium*, Pers. Perithecia globose, pale, 75 μ in diameter, bedded in the stroma and visible under the lens as horn-colored specks. Asci clavate-cylindrical, 20—22 x 3½ μ, sessile. Sporidia partly biseriate, 8 in an ascus, each consisting of two globose, hyaline cells about 1 μ in diameter and easily separating. The stroma (?) appears to be a true *Corticium* with clavate-cylindrical basidia bearing subglobose, 3 μ spores. If we adopt this view the ascigerous perithecia are parisitic on the *Corticium* and might be referred to *Hypomyces* but for the sporidia which are those of *Hypocrea*. It is certainly a very peculiar fungus.

DIATRYPE MEGASTOMA, E. & E.—On dead trunks of *Alnus serrulata*, Newfield, N. J., July, 1885. Stroma cortical, orbicular, 2—3 mm. in diameter, limited by a black line which penetrates the wood beneath to the depth of about 1 mm., often confluent or subconfluent in series of 5—10 cm., bursting through the bark with a longitudinal cleft. Perithecia 15—25 in a stroma, orbicular or ovate, with thick, black, membranaceous walls, contracted above into a narrow neck. Ostiola large, prominent, and 4—5-stellate-cleft. Asci slender, clavate, 75—80 x 6—7 μ (spore-bearing part 35—40 μ long). Paraphyses very abundant and distinct at first, much exceeding the asci but finally disappearing. Sporidia cylindrical, yellowish, strongly curved, generally with a nucleus in each end, subbiseriate above, 5—6 x 2 μ. This is allied to *D. microspora*, Ell., and *D. moroides*, C. & P. From the former it may be distinguished by its smaller and less prominent stroma, and its longer asci and longer, lighter colored, strongly curved sporidia, and from the latter by its stroma limited by a black line, its more prominent and larger ostiola, and its strongly curved, much lighter colored, shorter sporidia. It may be distinguished by these last two characters also from *D. phæosperma*, Ell.

D. megastoma is accompanied by a *Libertella* with filiform, curved spores 20—25 x 1 μ—apparently its spermogonial stage.

(TO BE CONTINUED.)

NEW LITERATURE.

BY W. A. KELLERMAN.

"PLANTS OF THE GREELEY EXPEDITION." By Geo. Vasey. The Botanical Gazette, Sept. and Oct., 1885.

A list of plants collected in the vicinity of Fort Conger, Grinnell Land, and read before the Botanical Club of the A. A. A. S., consisting of sixty-one flowering plants, two equiseta, one fern and one fungus. The latter, hitherto undescribed, is as follows:

Puccinia Cheiranthi, E. & E.—On *Cheiranthus pygmæus*, Grinnell Land. III. Sori hemispheric, brown, naked, ½—¾ mm. in diameter, thickly scattered over both sides of the leaves, but (in the specimen examined) not confluent. Spores oblong or clavate-oblong, light brown, constricted at the septum, 35—53 x 15—22 μ, either consisting of two subequal cells, or, oftener, the upper cell broader and shorter (subglobose), and the lower one tapering into the stout, rather persistent pedicel, which is about as long as or a little longer than the spore itself; epispore smooth or faintly but rather coarsely roughened above, thickened and lacerated at the apex so as to resemble somewhat the remains of the calyx on a currant or huckleberry. I. and II. not seen. This appears to be sufficiently distinct from the other species on the Cruciferæ.

"THE ÆCIDIUM OF ADOXA." By J. C. Arthur, l. c.

Plants of Adoxa Moschatellina were sent from Iowa to Geneva, N. Y., where was tested the suggestion that Æcidium albescens, Grev. (a state of Puccinia Adoxæ DC., according to European botanists, but the latter has not been found in this country) might be perennial in the subterranean stems of Adoxa. The host plants were entirely covered with the æcidia, and continued to harbor them till the leaves dropped off in the Fall. The pot containing the plants was sunk out of doors till the ensuing March, when it was again put in the greenhouse and it at once started into vigorous growth. Up to September no æcidia had appeared, showing apparently that Æ. albescens, Grev., is an annual.

"Notes on Black-knot." By A. A. Crozier, Ann Arbor, Mich., l. c.

First examination (of Plowrightia morbosa) January 6, asci considerably developed and spores beginning to form. First of March, most of the asci contained spores, but unripe. Most spores the middle of May, and they were furnished with thicker, dark-colored walls. Ascospores continued to be formed till June 17. Knots on wild plum contained no live perithecia. In a few cases the knot was found on Prunus serotina.

"Proof that Bacteria are the Cause of the Disease in Trees known as Pear Blight." By J. C. Arthur, l. c.

"Notes on Some Injurious Fungi of California." By W. G. Farlow, l. c.

An account is given of Peronospora Hyoscyami, De By., found by Dr. Farlow abundantly on Nicotiana glauca, Grah. The latter "may perhaps spread northward and eastward until it reaches the Gulf States, carrying with it the Peronospora, but it is too tender to stand the winters further north without protection. What is also to be feared is, that in advancing eastward, the fungus may be communicated to some species related to the N. glauca, as, for instance, Hyoscyamus niger, and thus be transported north of the limit, where the N. glauca might grow, but where N. Tabaccum (the Tobacco plant) is cultivated. But this supposition is almost superfluous, because if N. glauca and its parasite are once introduced into the Gulf States the parasite might attack the tobacco grown there, and then pass on to Virginia and other States where Tobacco is the most important crop."

Peronospora Halstedii, Farlow, grows on Madia sativa near San Francisco, thus extending across the continent. Puccinia Malvacearum, Mont., was first seen by Mr. D. Cleveland in 1875, near San Diego, and since by others there and elsewhere, on Malvastrum. Though this form has been named by Prof. Peck, P. Malvastri, Dr Farlow seems to be of the opinion that it is only a variety of P. Malvacearum, Mont. It is curious, however, that this western variety and not the typical form, or European species, was found on the hollyhocks at Santa Barbara.

"Exobasidium Woronin." Von H. Karsten. Botanisches Centralblatt, Band XXIII, No. 12.

"Einige neue Pilz-Species und Varietæten aus Slavonien."

Von Stephan Schulzer von Mueggenburg. Hedwigia, 1885, Heft IV.

"Myxomyceten der tatra." Von M. Raciborski in Krakan, l. c.

"Eine neue Puccinia." Von Prof. C. A. J. A. Oudemans,

Latin diagnosis of Puccinia Veronicæ Anagallidis, n. s. differt a P. Veronicæ forma sporarum magis condensata, præprimis vero absentia absoluta cujusvis adpendicis cuculliformis vel conoidei palladioris in cacumine loculamenti superioris.

"First Discovery of the Cholera Bacillus." By Francis Fowke, F. R. M. S., Midland Naturalist, Sept. 1885.

"The Mycologic Flora of the Miami Valley, Ohio." By A. P. Morgan. Journal of the Cincinnati Society of Nat. Hist. Vol. VIII, p. 168, continued from Vol. VIII, p. 110. Polyporus continued, and Myriadoporus.

"Nonnulli fungi Paraguayenses a Balansa lecti." Auctore Dr. G. Winter. Revue Mycologuique, Octobre, 1885.

"Champignons nouveaux de l'Aube, Fasc. I." Major Briard, l. c.

"Fungi Gallici exsiccatti.—Centurie XXXVe." C. Roumeguere, l. c.

"Note sur un nouveau genre et quelque nouvelles especes de Pyrenomycetes," par M. E. Boudier, l. c.

The new genus (of which one species is given, R. variospora, Boud, frequens ad radices Asparagi officinalis ad latera viarum dejectas) is described as follows: Richonia gen. nov.—Perithecia semper repleta, firma, sparsa, superficialia, carbonacea, astoma, supra rotundata, subtus depressa, intus grumosa. Thecæ clavatæ, crassæ, 2—6-sporæ, mox resolutæ. Sporæ majores, didymæ, loculis rotundatis obtusæ, ad septum constrictæ, primo leves, hyalinæ, guttulatæ, dein filamentosæ, marcescentes olivascentes, denique maximæ, aterrimæ, rugulosæ et difformes Parhphyses numerosæ, tenues, ramosissimæ et intricatæ, thecas et sporas circumdentes.

Genus Perisporacearum hypogœum (?) rhizophilum, a genere Zopfia sporis filamentosis non appendiculatis et thecis clavatis omnino diversum.

"The Spot Disease of Strawberry Leaves." By William Trelease. Extr. from the Second Annual Report of the Wisconsin Experiment Station.

An account of the Ramularia Tulasnei, Sacc., its structure, growth ravages, etc. Illustrated by three figures, one of a leaf, natural size, showing the white spots; a second showing a tuft of spore-bearing threads emerging through a stoma, and a third giving a section through two sclerotia or Ramularia Tulasnei, Sacc., on a diseased strawberry leaf.

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